

GRANBERG, D.L.

"How to Improve the Organization of Combine Repair at Machine-tractor Stations and State Farms." Saratovskoe obl.gos.izd-vo. 1949.

Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

~~GRANBERG~~ D. I., kandidat sel'skokhozyaystvennykh nauk; ALEKSEYENKO, V.A.,  
kandidat sel'skokhozyaystvennykh nauk.

Effectiveness of harvesting grain in separate stages. Zemledelie 5  
no.6:19-24 Je '57. (MLRA 10:8)

1. Povolzhskiy filial Vsesoyuznogo nauchno-issledovatel'skogo  
instituta ekonomiki sel'skogo khozyaystva.  
(Grain--Harvesting)

GRANBERG, G.I.

Using electron microscopes in studying products of hydration of  
calcium aluminates. Trudy NIIZHB no.10:147-159 '59.

(MIRA 13:3)

(Electron microscope) (Calcium aluminates)

GRANBERG, M.; SHCHARANSKIY, B.

What the speaker did not say. Sov. shakht. 12 no.6:37-38 Je  
'63. (MIRA 16:9)

1. Sotrudniki neshtatnogo otdela zhurnala "Sovetskiy shakhter"  
po Donetskoy oblasti.  
(Donetsk Province--Coal mines and mining--Labor productivity)

GEORGESCU, Amilcar; VULPESCU, Sonia; CIOBANU, V.; DUMITRIU, L.; GRANCEA,  
Alexandra; BUJAR, H.

Considerations on the radiodiagnosis and x-ray therapy of periarthritis  
of the shoulder. Stud. cercet. med. intern. 2 no.4:489-497 '61.  
(PERIARTHRITIS radiography) (SHOULDER diseases)  
(RADIOTHERAPY)

ROXIN, T.; GEIB, R.; SIGHETEA, Elena; GOCIU, Mariana; BUJAR, H.; GRANCEA,  
Alexandra

The place of radiotherapy in the current treatment of malignant  
lymphogranulomatosis. Clinical and radiological study of 105 cases.  
Stud. cercet. med. intern. 3 no.5:631-640 '62.  
(HODGKIN'S DISEASE) (RADIOTHERAPY)

SCHMITZER, Gh.; GRANCEA, V.

Contribution to the clinicoradiologic study of the cervical  
column. Congenital anomalies and malformations. Rumanian med.  
rev. 19 no.3:51-61 J1-S '65.

*GRANCEA, I.*  
FILIP, A.; GRANCEA, I.; IONESCU, E.

On the activation of the cooling water circulating in the primary circuit of the reactor VVR-S of Bucharest. Studii cerc fiz 12 no.3: 589-593 '61.

1. Institutul de fizica atomica, Bucuresti.

(Nuclear reactors) (Radioactivity) (Water)

S/081/62/000/012/037/063  
B166/B101

AUTHORS: Filip, A., Grancha, I., Ionescu, Ye.

TITLE: Activation of the cooling water in the primary circuit of the BBP-C-VAE (VVR-S-IAF) reactor in Bucharest

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1962, 377, abstract 12K24 (Rev. phys. Acad. RPR, v. 6, no. 3, 1961, 299-304)

TEXT: Long- and short-lived isotopes, products of the corrosion of Al and stainless steel, were determined by filtration of the water from the primary circuit of the reactor on an ion-exchange filter and detection of beta-active isotopes from the curves of their absorption in Al, and gamma-active isotopes by scintillation gamma-ray spectroscopy. It is suggested that the radioactivity of the water is caused by the presence of  $Mg^{27}$ ,  $Mn^{56}$ ,  $Na^{24}$ ,  $W^{187}$ ,  $Fe^{59}$ ,  $Sr^{89}$ ,  $Ta^{182}$ ,  $Ag^{110}$  and  $Co^{60}$ .  
10 references. [Abstracter's note: Complete translation.]

Card 1/1

ACCESSION NR: AP4041443

S/0188/64/000/003/0100/0100

AUTHOR: Grancha, I.; Romanovskiy, Ye. A.; Timishev, G. F.

TITLE: Measurement of the polarization of protons with an energy of 6.6 Mev during elastic scattering on Li seven

SOURCE: Moscow. Universitet. Vestnik: Seriya 3. Fizika, astronomiya, no. 3, 1964, 100

TOPIC TAGS: proton polarization, proton scattering, lithium, elastic scattering

ABSTRACT: By use of a magnetic analyzer and polarimeters described earlier, the authors measured the polarization of protons elastically scattered on Li<sup>7</sup>, with an energy of 6.6 Mev. Protons were accelerated to an energy of 6.6 Mev in the 120-cm cyclotron of the NIIYaF MGU. The targets were made of metallic lithium of natural isotopic composition by spraying in a vacuum on a backing of gold leaf. The thickness of lithium on the backing was about 1.5 mg/cm<sup>2</sup>. The targets measured 35 x 70 mm. The magnetic analyzer made it possible to detect protons scattered on Li<sup>7</sup> and focus them onto targets. The results of the measurements are given in a table in the original. The angular distribution of elastic scattering of protons on Li<sup>7</sup> also was measured, making it possible to compare the character of the curve of angular distribution of polarization and the Rodberg theory (Nuclear Card 1/2

ACCESSION NR: AP4041443

Physics, 15, 72, 1960). The agreement was very good. Orig. art. has: 1 table.

ASSOCIATION: NIIYaF MGU

SUBMITTED: 01Jan64

ENCL: 00

SUB CODE: NP

NO REF SOV: 001

OTHER: 001

Card 2/2

GRANCHA, I.; ROMANOVSKIY, Ye.A.; TIMUSHEV, G.F.; KHASANI, M.M.

Efficient polarimeters for low and medium energy protons operated in combination with magnetic analyzers. Vest. Mosk. un. Ser. 3: Fiz., astron. 18 no.4:62-67 J1-Ag '63. (MIRA 16:8)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.  
(Polariscope) (Magnetic instruments)

ACCESSION NR: AP4043803

S/0188/64/000/004/0087/0087

AUTHOR: Grancha, I., Romanovskiy, Ye. A., Timushev, G. F., Khasani, M. M.

TITLE: Polarization of protons during scattering on carbon

SOURCE: Moscow. Universitet. Vestnik. Seriya 3. Fizika, astronomiya, no. 4, 1964, 87

TOPIC TAGS: proton polarization, proton, carbon target, cyclotron, proton scattering, polystyrene film target

ABSTRACT: The polarization of elastically scattered protons with an energy  $E_p = 6.6$  Mev was measured at the NIIYaF MGU during scattering on carbon. A beam of protons was accelerated to an energy of 6.6 Mev in the institute's 120-cm cyclotron. After exit from the acceleration chamber the beam was focused by a deflecting magnet and quadrupole lenses onto a target in the room adjacent to the cyclotron. Individual groups of particles, emanating from the target, were separated by a magnetic analyzer with a uniform field and terminals in the form of a circular ring. The central angle of the ring was  $90^\circ$ . The ring was 200 mm thick and had a mean radius of 70 cm. The carbon target consisted of a polystyrene film with a thickness of 7-10 mg/cm<sup>2</sup>. The analyzer was a polarimeter, also with a polystyrene film. After double scattering the protons were recorded by MK

Card 1/2

ACCESSION NR: AP4043803

nuclear photoplates with an emulsion thickness of 15-20 microns. The polarimeter used has been described earlier (I. Grancha et al., Vestn. Mosk. un-ta, ser. fiziki, astronomii, No. 4, 62, 1963). The results of the measurements are given in a table. Orig. art. has: 1 table.

ASSOCIATION: NIYaF MGU

SUBMITTED: 10Jan64

ENCL: 00

SUB CODE: NP

NO REF SOV: 001

OTHER: 001

Card 2/2

ASFUR, F.; GRANCH, I.; ROMANOVSKIY, Ye.A.; TIMUSHEV, G.F.; KHASANI, M.

Measuring the angular distribution for the reaction  
 $Al^{27}(p, )Mg^{24}$  by means of a magnetic analyzer at  $E_p = 6.6$  Mev.  
Vest. Mosk. un. Ser.3:Fiz., astron. 19 no.1:21-22 Ja-F '64.  
(MIRA 17:4)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo universiteta.

GRANCHA, I.; ROMANOVSKIY, Ye.A., TIMUSHEV, G.F.

Measuring the polarization of 6.6 Mev. protons elastically  
scattered by  $Li^7$ . Vest. Mosk. un. Ser. 3: Fiz., astron. 19  
no.3:100 My-Je '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki  
Moskovskogo universiteta.

GRANCHA, I.; ROMANOVSKIY, Ye.A.; TIMUSHEV, G.F.; KHASANI, M.M.

Polarization of protons scattering on carbon. Vest. Mosk.  
un. Ser. 3: Fiz., astron. 19 no.4:87 Jl-Ag '64.

(MIRA 17:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki  
Moskovskogo universiteta.

VIZOL'MIRSKIY, V.N., otv. red.; GRANCHAK, I.M., kand. istor. nauk,  
red.; IVANOV, S.D., red.; KLIMPOTYUK, N.V., red.; KUCHERUK,  
V.M., red.; LUCHKIV, M., tekhn. red.

[Soviet Transcarpathia; handbook] Sovetskoe Zakarpat'e;  
spravochnik. Uzhgorod, Zakarpatskoe oblastnoe knizhno-  
gazetnoe izd-vo, 1961. 223 p. (MIRA 15:2)  
(Transcarpathia--Handbooks, manuals, etc.)

VIZOL'MIRSKIY, V.N., kand. ist. nauk, red.; GRANCHAK, I.M.,  
red.; IVANOV, S.D., red.; KLIMPOTYUK, H.V., red.;  
KUCHERUK, V.M., red.; SEMION, I.V., red.

[Soviet Transcarpathia; a reference book] Sovetskoe  
Zakarpatt'e; spravochnik. Uzhgorod, Karpaty, 1965. 221 p.  
(MIRA 18:9)

MAZHDRAKOV, G.; GRANCHAROV, V.

Blood groups and gastric cancer. Vop. onk. 6 no. 11:17-22 N '60.  
(MIRA 14:1)

(STOMACH—CANCER) (BLOOD GROUPS)

GRANCSAROV, Hr.

The Bulgarian tobacco. Term tud kozl 7 no.4:184-185 Ap '63.

1. Plovdivi Dohanyipari Tudomanyos Kutatointezet igazgatoje.

GRANCIC, A.

"Development of the manufacture of reinforced and prestressed-concrete railroad sleepers." p. 206.

STAVBA. (POVERENICTVO STAVEBNICTVA). Bratislava, Czechoslovakia, Vol. 6, no. 7,  
July 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959.  
Uncl.

RUMANIA

GRANCIU, I.. Eng. of ICZ [Institutul de Cercetari Zootehnice  
Zootechnical Research Institute].

"Genetic Considerations Regarding Selection and the Progeny  
Test in Animals."

Bucharest, Revista de Zootehnie si Medicina Veterinara, Vol 16,  
No 9, Sep 66, pp 9-14.

Abstract: The author discusses the factors involved in the inheritance of the characteristics of animals and the various means used to select for breeding those animals with the most valuable readily transferred characteristics. He concludes that the testing of the descendants of an animal, preferably of its male descendants, is a good means to determine its hereditary potential and compare it to that of other animals.

Includes one figure and 7 references, of which 2 Rumanian, one Czech and 4 English-language.

RUMANIA

GRANCIU, I., Eng, of the Zootechnical Research Institute (Institutul de Cercetari Zootehnice).

"Some Current Problems Concerning the Selection of Young Cattle."

Bucharest, Revista de Zootehnie si Medicina Veterinara, Vol 13, No 11, Nov 63, pp 24-33.

Abstract: Discusses a number of factors affecting the improvement of cattle stocks by means of selection. The following are discussed in more detail: growth trends, reproduction systems, and categories of selection farms. Also evaluates the importance of analyzing the pedigree and line of descent in selecting reproductive stock.

Includes one figure and 21 references, of which 10 Rumanian, 6 Russian, 4 English-language and 1 French.

1/1

ASFUR, F.; GRANCHI, I.; ROMANOVSKIY, Ye.A.; TIMUSHEV, G.F.; KHASANI, M.M.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000516520013-8

Measurement of the polarization of  $CE_p = 6.6$  Mev. protons scattered on aluminum. Vest. Mosk. un. Ser. 3: Fiz., astron. 18 no.5:8-10 S-0 '63. (MIRA 16:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

GRANCH, I.; ROMANOVSKIY, Ye. A.; TIMUSHEV, G. F.

2

"Investigation of the Scattering of Protons by Li Nuclei."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

Moscow State Univ.

GRANCH, I.; ROMANOVSKIY, Ye. A.; TIMUSHEV, G. F.; KHASANI, M. M. 5

"Polarizations of Protons with Energies 6.6 MeV in the Case of Elastic and Inelastic Scattering on Some Light Nuclei."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

Moscow State Univ.

RUMANIA

GRANCIU, I., Engineer; and STEFANESCU, Dr. M., Institute for Zootechnical Research (Institutul de cercetari zootehnice)

"Current Status and Future Prospects for Improving Our Domestic Animal Breeds"

Bucharest, Revista de Zootehnie si Medicina Veterinara, Vol 16, No. 6, June 1966; pp 5-13

Abstract: Comprehensive discussion on breeds of dairy cows now kept in Rumania, the milk production and possibility of raising the milk production through interbreeding and creating better breeds, with examples; sheep as to wool and ovine meat (Merinos, Karakul) and pigs (Bazna - Sappelschwein); comments on artificial insemination; limits of empiricism and general principles of animal breeding.

1/1

SADOWNIK, Janina; GRANDA, Jan; WILCZYNSKI, Mikolaj

Examination of man and animals for tuberculosis in the Bialystok Region in 1960 and 1962. I. Gruzlica 31 no.6:738-741  
Je'63

1. Wojewodzka Przychodnia Przeciwgruzlicza i Zaklad Higieny  
Weterynaryjnej, Bialystok.

★

FINKEL'SHTEYN, E.S.; YEFIMOV, V.V., zasl. deyatel' nauki i tekhniki  
RSFSR, doktor tekhn.nauk, prof., red.; GIRYAYEVA, V.A., red.;  
GRANDA, V.I., red.; BARANOV, Yu.V., tekhn. red.

[Deformation of a cylinder block and its effect on the  
performance of crankshaft bearings of engines] Deformatsiia  
bloka tsilindrov i ee vliianie na rabotu korennykh podship-  
nikov dvigatelia. Moskva, Rosvuzizdat, 1963. 21 p.

(MIRA 17:3)

GRANDAL', D.

PVO i okhrana zheleznodorozhnykh voinskikh eshelonov. [Anti-aircraft defense and the protection of troop transportation by rail]. (Voennaya mysl', 1938, no. 4, p. 27-49, sketches)

DLC: U4.782

SO: SOVIET TRANSPORTATION AND COMMUNICATION, A BIBLIOGRAPHY, Library of Congress Reference Department, Washington, 1952, Unclassified.

KOST, A. N.; GRANDBERG, G. A.; TERENTYEV, A. P.

"Isomerization and Rearrangements of Substituted Hydrazones and Pyrazolines."  
Moscow State University

19th International Congress of Pure and Applied Chemistry '63

*London 10-17 Jul 1963*

GRANDBERG, I.I.; KOST, A.N.

Reactions of hydrazine derivatives. Part 4. New synthesis of  
benzylhydrazine. Vest.Mosk. un.10 no.12:119-120 D '55.  
(MLBA 9:5)

1. Kafedra organicheskoy khimii.  
(Hydrazine)

KOST, A.N.; GRANBERG, I.I.

Catalysts and mechanism of the Leuckart reaction. Zhur.ob.khim.  
25 no.7:1432-1437 J1'55. (MIRA 8:12)

1. Moskovskiy gosudarstvennyy universitet.  
(Leuckart reaction)

*Grandberg, I.I.*

*Reduction with formic acid and its derivatives. I. Re-  
duction of azines and hydrazones. A. N. Kost and I. I.  
Grandberg. J. Gen. Chem. U.S.S.R. 25, 1673-6 (1956)  
(Engl. translation).—See C.A. 50, 5544e. B. M. R.*

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KOST, A.N.; GRANDBERG, I.I.

Reduction by means of formic acid and of its derivatives. Part 1.  
Reduction of azines and hydrazones. Zhur.ob.khim. 25 no.9:1719-1723  
S '55. (MIRA 9:2)

1.Moskovskiy gosudarstvennyy universitet.  
(Reduction, Chemical) (Azines) (Hydrazones)

GRAND BERG I I.

Reactions of hydrazine derivatives. I. Synthesis of 1,1-pentamethylenebicyclo[0.1.4]heptane. A. N. Kost and I. Grandberg (State Univ., Moscow). *Zhur. Obshchei Khim.* 29, 2004-70 (1955); cf. Zelinskii, et al., *C.A.* 27, 2430. To 196 g. cyclohexanone was added 52 g. 90%  $N_2H_4 \cdot H_2O$  in 70 ml.  $H_2O$  at 70-80° and, after addn. of 100 ml.  $Et_2O$ , the mixt. was left overnight; after addn. of 100 ml.  $H_2O$  and 150 ml.  $Et_2O$ , the org. layer was sepd. and distd., yielding 93.7% cyclohexanone azine,  $b_p$  142-0°,  $n_D^{20}$  1.5202,  $m$  34°. This (96 g.) was treated with good stirring with 40.5 g. dry  $CO_2H_2$  and heated 2 hrs. at 70-5° under  $CO_2$ ; treatment of the cooled mass with an aq. soln. of 87 g.  $K_2CO_3$  in 600 ml.  $H_2O$  and extrn. with  $C_6H_6$  gave on distn. under N 90.6% easily oxidizable 3,4-tetramethylene-5,5-pentamethylenepyrazoline (I),  $b_p$  165-7°,  $m$  80° (phenylureido deriv.,  $m$  122°). If, however, the azine (38.4 g.) were treated with 11.2 g. 100%  $HCO_2H$  and heated 3 hrs. at 40-50°, then treated with  $NH_4OH$ , and extrd. with  $C_6H_6$ , there was obtained 26.6% I and 23.1 g. *N*-formyl deriv. of I,  $b_p$  180-210°,  $m$  73°, which hydrolyzed with  $HCl$  in 1

5  
A. n. Kast

lit. at 105° to 1. I (90 g.) and 2 g. LiOH heated on an air bath with slow distn. gave, after purification of the resulting hydrocarbon with 40% and 30% HCO<sub>2</sub>H, then with Na, 73.1% 1,1-pentamethylenebicyclo[0.1.1]heptane (II), bp<sub>760</sub> 232-2.5°, n<sub>D</sub><sup>20</sup> 1.4973; a very pure specimen bp<sub>760</sub> 232°, b<sub>D</sub> 98°, n<sub>D</sub><sup>20</sup> 1.4972, d<sub>4</sub> 0.9278, l.p. about -73°. A 57.8% yield is obtained (based on cyclohexanone) without isolation of the above intermediates. II does not react with BzO<sub>2</sub>H; heated with S to 210° it gave 44.5% Ph<sub>2</sub>. II with HBr in AcOH at 0° gave 1-bromo-1-cyclohexylcyclohexane, m. 39.5° (crude), m. 40° (from MeOH-Me<sub>2</sub>CO); the bromide heated with PhNH<sub>2</sub> in MePh gave 90.5% 1-cyclohexylcyclohexene, bp<sub>760</sub> 236°, n<sub>D</sub><sup>20</sup> 1.4948, d<sub>4</sub> 0.9062, which treated with dry HCl in AcOH gave 100% 1-chloro-1-cyclohexylcyclohexane, m. 39.5°, also formed from II and HCl in AcOH; the olefin with HBr gave the above bromide. II and aq. Hg(OAc)<sub>2</sub> in 20 days at 5° gave a solid, decomp. 150-80°, of unknown structure which contains Hg. II does not react with H over Pt at 250°.

G. M. Kosolapoff

freshly distd. cyclohexanone azine (1) & c. class wood and

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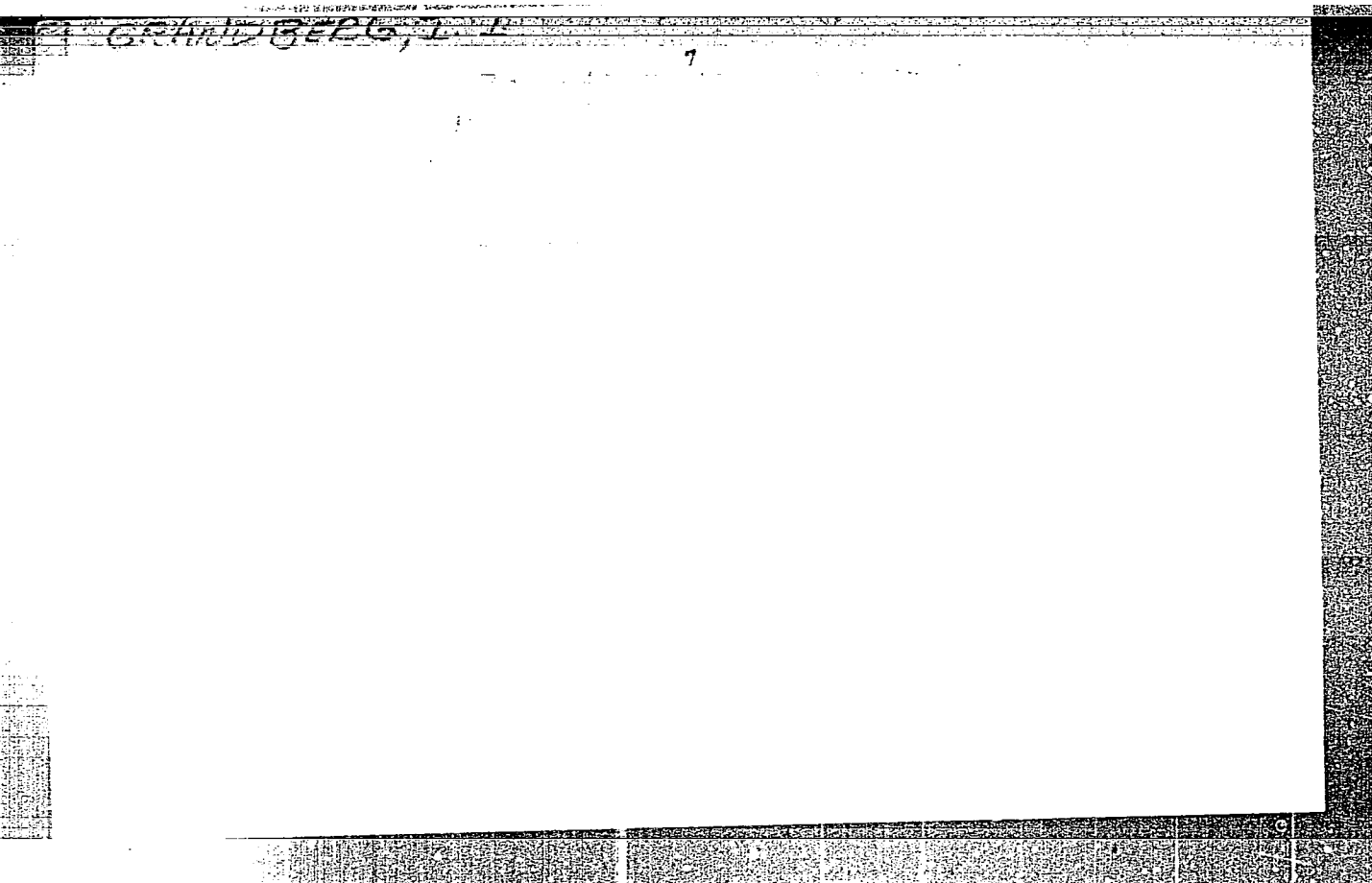
*Grandberg, Int*

7  
/ Reactions of hydrazine derivatives VII Oxidation  
of hydrazine under the action of anhydrous formic acid

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GRANDBERG, I. I.

USSR/Organic Chemistry. Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19206.

Author : Kost A. N., Grandberg I. I.

Inst :

Title : Reactions of Hydrazine Derivatives. V. Synthesis of 3,5,5-trialkylpyrazolones.

Orig Pub: Zh. obshch. khimiyi, 1956, 26, No 6, 1717-1720.

Abstract: With the intention of widening the possibilities of the synthesis of 3,5,5-trialkylpyrazolones (TAP) the regrouping of azines of asymmetrical ketones, obtained from the hydrazono hydrate of cyclohexanone (I) by the action of anhydrous  $\text{HCOOH}$  and  $(\text{COOH})_2$  is investigated. With the help of the synthesis of 5-methyl-3,5-diethylpyrazolone (II) by isomerization of the azine of methyl ethyl ketone (III), and the action of 96% hydrazine hydrate (IV) on 3-methylheptan-3-one-5 (V), the assumption of Curtius

Card : 1/5

E-2

USSR/Organic Chemistry. Synthetic Organic Chemistry.

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19206

(J. Prakt. Khim. 1958, (2), 58,310) that the isomerization of III is accomplished by the presence of the  $\text{CH}_3$ -group is confirmed. The amines of diethylketone, methylisobutylketone, and acetophenone by the action of  $\text{HCOOH}$  or  $(\text{HCOOH})_2$  did not isomerize into TAP. Azine of cyclopentanone gave condensation products of a complicated structure. To 2 moles 96% IV in 250 cc ether is added (1 hour) 1 mole cyclohexanone (VI). After a 0.5 of an hour is added 60 cc  $\text{CH}_3\text{OH}$ , heated for 1 hour to  $60^\circ$ , the solvent is distilled off, adding 80 g. KOH, and 100cc  $\text{C}_6\text{H}_6$ , and after 12 hours I is separated, yield 81.6%, m.p.  $39^\circ/9.5\text{mm}$ ,  $n_D^{20}$  1.5167,  $d_4^{20}$  0.9952. The mixed azine of acetone and VI (VII) is obtained by the addition of acetone (VIII) in drops at  $50^\circ$  to II (left standing 4 hours at  $50-55^\circ$  and adding potassium carbonate and ether). Yield of VII 59.5%, b.p.  $96-97^\circ/8-9\text{mm}$ ,

Card : 2/5

USSR/Organic Chemistry. Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19206

$d_4^{20}$  0.9660. At the hydrolysis of XVI 5-methyl-3,5-dipropylpyrazolone is separated, yield 90.4%, b.p. 111-113°/19 mm,  $n_D^{20}$  1.4594. Report IV see RZhKhim, 1956, 78115.

Card : 5/5

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000516520013-8

USSR/Organic Chemistry. Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19207

Author : Kost A. N., Golubyova G. A., Grandborg I. I.

Inst :

Title : Reactions of Hydrazine Derivatives. VI. Action of Alkylhaloids on the Azine of Acetone.

Orig Pub: Zh. obshch. khimiyi, 1956, 26, No 7, 1976-1979.

Abstract: Azine of acetone (I) at the interaction with the bromide or chlorido (III) allyl, brombutyl (IV), or chlorbenzyl (V) is cyclized into 3,5,5-trimethylpyrazolone (VI), whereby simultaneously are formed 1-allyl-(VII), 1-butyl-(VIII)-3,5,5-trimethylpyrazolones. Structure VI is determined by a counter synthesis according to Kizhner from mesityloxide and hydrazine hydrate; structure IX---benzylation VI. The cyclization of I is also accom-

Card : 1/3

USSR/Organic Chemistry. Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19208

II R" = CHO; III R" = H; a R=R' =H; b R=H, R' =CH<sub>3</sub>;  
c R=H, R' =C<sub>2</sub>H<sub>5</sub>; d R=R' = CH<sub>3</sub>; e R=H, R' =H, R' =CH(CH<sub>3</sub>)<sub>2</sub>;  
f R=H, R' =C<sub>4</sub>H<sub>9</sub>  
Ia, 66.7, 85-86/744, 1.4404, 0.8356; or Ib, 75.2, 137/735,  
1.4474, 0.8318; 0.85 mole corresponding aldehyde and  
0.425 mole 96% N<sub>2</sub>H<sub>4</sub>H<sub>2</sub>O is left standing for 24 hours and  
then extracted with ether Ic, 80, 78-81/26, 1.4520, 0.8315;  
Id, 87.2, 87-89/79, 1.4472, 0.8247; Ie, 90.5, 93/20,  
1.4549, 0.8442, or If, 64.8, 139/21, 1.4621, 0.8500. To  
0.2 mole HGOOH is added in the course of 15-20 min. 0.1  
mole of Ia - f; the mixture is left standing for 24 hours,  
alkalized with conc. sol. NH<sub>4</sub>OH, and extracted with ether  
II (the same enumeration) IIa, 60.7, 91/15, 1.4949,  
1.0945; IIb, 67.3 150/35, 1.4876, 1.0160; IIc 64.8, 150-  
151/33, 1.4797, 0.9788; IId, 79, 108-110/15, 1.4824,  
0.9840, IIe, 88.9, 139-141/13, 1.4762, 0.9536, or IIf,

Card : 2/3

USSR/Organic Chemistry. Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19208

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000516520013-8

55.4, 159.5/8.5 1.4769, 0.9945. 0.05 mole of IIa-f and  
25cc conc. HCl is evaporated to 0.5 of volume, alka-  
lized with conc. sol. NH<sub>4</sub>OH or NaOH and extracted with  
ether III (enumeration the same) : IIIa, 80, 151-155/749.5,  
1.4788, 0.9785; picrate, m.p. 141° (from alc.); IIIb 39.8  
83-85/18 1.4647, 0.9271; oxalate, m.p. 104-105° (from  
abs. alc.); IIIc, 51.6, 102-103/18, 1.4682, 0.9130; IIId,  
81, 96-99/34, 1.4619, 0.9013; hydrochloride, m.p. 148°  
(from alc.); oxalate, m.p. 109.5° (from abs. alc.); IIIe,  
79.8, 119.5/22, 1.4643, 0.8960; oxalate, m.p. 123° (from  
abs. alc.), or IIIf 91.2, 160-162/24, 1.4680, 0.8911;  
oxalate, m.p. 80° (from abs. alcohol - ether).

Card : 3/3

KOST, A.N.; GRANDBERG, I.I.; GOLUBEVA, G.A.

Reactions of hydrazine derivatives. Part 8. Cyclization of  
aldazines by alkyl halides. Zhur.ob.khim. 26 no.9:2604-2607  
(MLRA 9:11)

GRANDBERG I.I.

B-4

USSR/Physical Chemistry - Molecule, Chemical Bond.

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 6918.

Author : N.B. Kupletskaya, A.N. Kost, I.I. Grandberg.

Inst :

Title : Reactions of Hydrazine Derivatives. X. Absorption Spectra of Azines and Pyrazolines.

Orig Pub: Zh. obshe. khimii, 1956, 26, No 11, 3135 - 3138.

Abstract: The ultraviolet absorption spectra of  $\text{CH}_3\text{OH}$  solutions of the following compounds were studied: a) acetaldehyde, butyl-, isobutyl- and isovaleraldehyde azines; b) azines of acetone (I), methylethylketone, methylpropylketone, cyclohexanone (II) azines and mixed I and II azine (III); c) substituted pyrazolines and their hydrochlorides: 5- $\text{CH}_3$ -, 1- $\text{CH}_3$ -5- $\text{CH}_3$ -, 4- $\text{CH}_3$ -5- $\text{C}_2\text{H}_5$ -, 4-iso- $\text{C}_3\text{H}_7$ -5-iso- $\text{C}_4\text{H}_9$ -, 4,4-( $\text{CH}_3$ )<sub>2</sub>-5-iso- $\text{C}_2\text{H}_7$ -, 1- $\text{CH}_3$ -4,4-( $\text{CH}_3$ )<sub>2</sub>-5-iso- $\text{C}_3\text{H}_7$ -, 1- $\text{CH}_3$ -4,4-( $\text{CH}_3$ )<sub>2</sub>-5-iso- $\text{C}_3\text{H}_7$ -, 1,4,4-

Card : 1/3

USSR/Physical Chemistry - Molecule, Chemical Bond.

B-4

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 6918.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000516520013-8

( $\text{CH}_3$ )<sub>3</sub>-5-iso- $\text{C}_3\text{H}_7$ -, 1- $\text{CHO}$ -5- $\text{CH}_3$ -3,5-( $\text{C}_2\text{H}_7$ )<sub>2</sub>-, 3- $\text{CH}_3$ -5,5-( $\text{CH}_2$ )<sub>5</sub>-, 3,4-( $\text{CH}_2$ )<sub>4</sub>-5,5-( $\text{CH}_2$ )<sub>5</sub>-, 1- $\text{CHO}$ -3,4-( $\text{CH}_2$ )<sub>4</sub>-5,5-( $\text{CH}_2$ )<sub>5</sub>- and 3,4-( $\text{CH}_2$ )<sub>3</sub>-5,5-( $\text{CH}_2$ )<sub>4</sub>- (IV). The spectrum curves,  $\lambda$  (max.) and  $\log \epsilon$  are given. The earlier observation (Grammaticakis, Bull. Soc. chim. France, 1948, 15, 973) that the  $\lambda$  (max.) of aldazines is under 225 m  $\mu$  was confirmed; it was found that ketones, with the exception of III, absorb in the range of about 230 m  $\mu$  (III absorbs at 230 m  $\mu$ ). It was established that the majority of the studied pyrazolines have 2 absorption bands: 225 to 230 (log  $\epsilon$  = 3 to 5) and 320 to 330 m  $\mu$  (log  $\epsilon$  = 1 to 2) and that the character of the absorption curves depends little on the substitutes; the spectrum change at the transition to hydrochlorides is little characteristic. Cyclopentylidenecyclopentanone (V) was synthesized by the reaction of 197 g of cyclopentanone and 96 g of  $\text{CaC}_2$  (two hour's boiling), yield 54%, boiling point 119 to 122° at 14 mm, 136 to 137° at 25 mm,  $d_4^{20} = 1.0169$ ,  $n_D^{20} = 1.5209$ .

Card : 2/3

-10-

USSR/Physical Chemistry - Molecule, Chemical Bond.

B-4

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 6918.

AUTHORS: Grandberg, I. I., Kost, A. N., 79-12-32/43  
Terent'yev, A. P.

TITLE: Reactions of the Hydrazine Derivatives (Reaktsii proizvodnykh gidrazina).  
XVII. A New Synthesis of the  $\alpha$ -Methyltryptofol (XVII. Novyy sintez  $\alpha$ -metiltryptofola).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 12, pp. 3342-3345(USSR)

ABSTRACT: Lipp published in 1889, that on the reaction of the phenylhydrazine with acetopropylalcohol 1 - phenyl - 3 - methyl - 1,4,5,6 - tetrahydropyridazine is obtained very easily. Attempting to repeat Lipp's reactions, the authors obtained a product with the constants given by him, it proved, however, to represent not tetrahydropyridazine, but the non-cyclic phenylhydrazone of the acetopropylalcohol. Subject to the action of hydrochloric acid this phenylhydrazone easily splits off phenylhydrazine. At a heating to 200°C it does not give up any water and does not transform into tetrahydropyridazine. In the presence of a catalytical amount of zinc chloride there results the  $\alpha$ -methyltryptofol. Its structure is supported by its conversion into the substituted

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Reactions of the Hydrazine Derivatives.

79-12-32/43

XVII. A New Synthesis of the  $\alpha$ -Methyltriptofol

triptamine by way of the bromide, that is to say into the 2-methyl - 3 - di-methyl aminoethylindole. The reactions described here do not only prove the structure of the phenylhydrazone, they also appear to constitute a new way for the synthesis of the  $\alpha$ -methyltriptofol, which up to now was obtained in a much more complicated way. The  $\alpha$ -methyltriptofol easily commutes into the acetate, which was characterised as pikrate, if it is subjected to the action of acetic acid anhydride (see the course of the reaction represented by six formulae). Besides, it was succeeded to synthesize the pyradizine by a conversion of the phenylhydrazine with methyl -  $\gamma$  -chloro-propylketone. The pyradizine differing from phenylhydrazone easily furnished a pikrate. There are 2 references, 0 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet).

SUBMITTED: December 12, 1956

AVAILABLE: Library of Congress

Card 2/2

1. Hydrazine derivatives-Quantitative analysis
2.  $\alpha$ -Methyltriptofol-Synthesis

AUTHORS: Kost, A. N., Busev, A. I., SOV/156-58-2-37/48  
Grandberg, I. I., Byr'ko, V. M.

TITLE: The Dithiocarbamates of the Pyrazoline Series (Ditiokarbamaty pirazolinovogo ryada) Their Synthesis and Investigation as Analytic Reagents (Sintez i izucheniye ikh kak analiticheskikh reagentov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 349 - 353 (USSR)

ABSTRACT: The first mentioned salts are widely used in analytic chemistry (Refs 1-3). The acids from pyrrolidine and piperidine synthesized are stable in acid media and in the case of heating and have a somewhat higher selectivity than others. The comparatively simple new production methods of the pyrazolines (Refs 4-7) enabled the authors to carry out the synthesis of the dithio-carbamic acids of the pyrazoline series (1-dithio-carboxy-pyrazoline). These acids were isolated as sodium salts. They crystallize well, are stable in dry state and well soluble in water as well as in alcohol. The aqueous solutions of these salts give an alkaline reaction; in

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The Dithiocarbamates of the Pyrazoline Series. Their  
Synthesis and Investigation as Analytic Reagents

SOV/156-58-2-37/48

the case of an acidification, however, a decomposition takes place, since the corresponding dithio carbamic acids are not stable. A new method due to Fedoseyev (Ref 9) was used here, since an elementary analysis of the sodium salts by means of usual methods does not yield good results (e.g. Ref 8). The products of the ethylation of cyanogen have a distinct melting temperature and may therefore serve for the identification of the substances. 10 (I - X) compounds were synthesized and investigated as analytic reagents. Absorption spectra taken for the sodium salts and the stability in aqueous solutions were investigated. The solubility of some cadmium derivatives was determined by means of the method of tracer atoms. It was proved that pyrazoline dithio-carbamates separate certain groups of metal cations at different pH-values. There are 2 figures, 1 table, and 13 references, 9 of which are Soviet.

Card 2/3

The Dithiocarbamates of the Pyrazoline Series. Their  
Synthesis and Investigation as Analytic Reagents

SOV/156-58-2-37/48

ASSOCIATION: Kafedry organicheskoy i analiticheskoy khimii Moskovskogo  
gosudarstvennogo universiteta im.M.V.Lomonosova (Chair  
of Organic and Analytical Chemistry of the Moscow State  
University imeni M.V.Lomonosov)

SUBMITTED: November 29, 1957

Card 3/3

GRANDBERG, I. I.

AUTHORS: Kost, A. N., Grandberg, I. I., Yevreinova, E. B. 79-2-51/64

TITLE: On the Reaction of Hydrazine Derivatives  
(Reaktsii proizvodnykh gidrazina).  
XVIII. On the Effect of the Acid Agent on Azines  
(XVIII. O deystvii kislotnykh agentov na aziny).

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 512-518  
(USSR)

ABSTRACT: The descriptions of the effect of the acyl halides on azines are very contradictory. The results obtained by Minnani et al. (ref. 5), Lochte et al. (ref. 6) and Benary (ref. 7) cannot be brought in line. Benary's observation of the transformation of cyclohexane azine into octahydrocarbazole was confirmed, however, it was not possible to use the reaction for other azines. A compound with the melting point 236°C was obtained from acetone azine with benzoyl chloride equal to that obtained by Lochte which, however, was no benzoylpyrazoline but was symmetrical to dibenzoylhydrazine. In the case of complete elimination of humidity the same reaction however, actually produces benzoylpyrazoline which, however, shows completely different properties (melting point 93°C) and was

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On the Reaction of Hydrazine Derivatives.

79-2-51/64

XVIII. On the Effect of the Acid Agent on Azines

characterized first by the authors of the present work. The cleavage of the azines under formation of the symmetry of the diacylhydrazines was observed also on the occasion of the action of benzoyl chloride on azines of the methylisopropylketone or of the cyclopentanone. Beside the usual determinations of configuration N. B. Kupletskaya (ref. 9) also put down the corresponding absorption spectra. It is stated that the occurrence of a cleavage or a cyclization depends not so much on the nature of azine and the acylating agent but on the reaction conditions. If humidity is in the reaction mass, mainly a cleavage of the azine takes place. On the occasion of cyclization of cyclopentanone azine with anhydrous formic acid the compound  $C_{15}H_{22}N_2$  was obtained.

According to V. A. Koptsik (Physical Faculty of Moscow State University it shows, among other, a strong piezoelectric effect. It was observed that cyclohexanoneazine reacts energetically to phosphorous tribromide and that  $\beta$ ,  $\beta'$ -dibromodiethylether (due to the dioxane ring cleavage) is formed in dioxane with octohydrocarbazole.

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On the Reaction of Hydrazine Derivatives.

79-2-51/64

XVIII. On the Effect of the Acid Agent on Azines

The experimental data as well as the structural formulae of the synthesized compounds are given.

There are 3 figures, and 16 references, 8 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet)

SUBMITTED: February 7, 1957

AVAILABLE: Library of Congress

Card 3/3

AUTHORS: Grandberg, I.I., Kost, A.N.

SOV/79-28-11-37/55

TITLE: Reactions of Hydrazine Derivatives (Reaktsii proizvodnykh gidrazina)  
XX. Dehydration of Pyrazolines (Degidrirovaniye pirazolinov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 11, pp 3071-3075 (USSR)

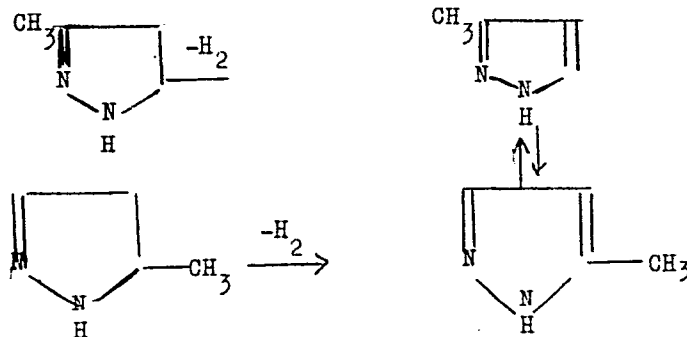
ABSTRACT: Experiments of the authors to oxidize the 4-ethyl-5-propyl- and 4-isopropyl-5-isobutyl pyrazoline failed. Various types of oxidizing agents, as selenium dioxide, nitric acid, permanganate etc. destroyed the pyrazoline cycle under the formation of many oxidation products. The N-formyl-, N-acetyl and N-benzoyl pyrazoline derivatives were not attacked by weak oxidizing agents, and by strong oxidizing agents were subjected to a similar destruction under the formation of nitrogen. In the bromination besides the oxidation also a bromination took place. The authors succeeded in smoothly realizing the transition of the pyrazolines into the pyrazoles. They used selenium, and with a still better result sulfur as dehydration medium. The reaction took place at 150-250° without side processes. It is finished as soon as no more hydrogen sulfide is formed. An excess sulfur is of no importance. In the pyrazoles there are, contrary to the pyrazolines, two conjugated double bonds with a free pair of electrons of the nitrogen atom. In the case of such a structure

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SOV/79-28-11-37/55

Reactions of Hydrazine Derivatives. XX. Dehydration of Pyrazolines

with an electron sextet in the nucleus compounds with a substituent in the position 3 prove to be identical with compounds having a substituent in the position 5. For this reason, for instance, the 3-phenyl-5-methyl pyrazole (90 %) is obtained in the hydration of the 3-methyl-5-phenyl pyrazoline. In the same way as from 5-methyl- also from 3-methyl pyrazoline one and the same 3,(5)-methyl pyrazole was obtained (75 and 90 %):



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SOV/79-28-11-37/55

Reaction of Hydrazine Derivatives. XX. Dehydration of Pyrazolines

Four of the synthesized pyrazoles (yield: 65-90 %) have hitherto not been described. The proposed method can be easily employed and may serve as preparatory synthesis of alkyl and aryl pyrazoles. There are 24 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 2, 1957

Card 3/3

17(1)

AUTHORS:

Pershin, G. N., Novitskaya, N. A.,  
Kost, A. N., Grandberg, I. I.

SOV/20-123-1-54/56

TITLE:

The Effect of Pyrazole Derivatives Upon the Central Nervous System (Deystviye proizvodnykh pirazola na tsentral'nyu nervnyu sistemu)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 1, pp 200 - 203 (USSR)

ABSTRACT:

The pharmacological properties of pyrazole derivatives have hardly been explored. The analgesic, antipyretic and anti-phlogistic effects of 1-phenyl-pyrazolone-5- and 1,2-diphenyl-pyrazolidindion-3,5 (antipyrine, pyramidon, butadion) are well known. Methods developed in recent years of pyrazole synthesis, among others by dehydration of pyrazolines by means of sulphur (Ref 4), have made these compounds more accessible. For instance, 3-methyl-5-phenyl-pyrazole has proved efficient as a sedative and soporific. 3-phenyl-pyrazole has similar effects. The difference in effects between these two substances bases upon a more distinct decrease of muscle tone before quieting by the latter substance. The substances mentioned are hardly toxic. The fatal dose per os amounts

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The Effect of Pyrazole Derivatives Upon the Central  
Nervous System

SOV/20-123-1-54/56

to 500 mg/kg with mice, and 1800 mg/kg with rats. The effect of 3-methyl-5-phenylpyrazole was studied in greater detail. The test results showed that the latter substance has a very distinct effect upon the nervous system. This effect is quieting, soporific, antispasmodic and antipyretic. At present it is not yet certain whether this substance compares in its way of acting with the known pharmacological groups (barbiturate, reserpine, aminazine, and others), or whether it has special effects not yet described. In any case this preparation needs more intensive investigations in order to clarify the possibilities of its application in medicine. This is also true of pyrazole derivatives. In a chapter on experiments the method of production of the substance mentioned is described. There are 3 tables and 7 references, 4 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut im. S. Ordzhonikidze (All-Union Scientific Chemical  
Pharmaceutical Institute imeni S. Ordzhonikidze) Moskovskiy  
gosudarstvennyy universitet (Moscow State University)

Card 2/3

KOST, A.N.; SHUMAKOVA, A.A.; KOZLOVA, Ye.I.; GRANDBERG, I.I.

Reactions of hydrazine derivatives. Part 26: Fungicidal action of pyridazines and hydrazones. Vest.Mosk.un.Ser.mat., mekh., astron., fiz., khim. 14 no.3:205-211 '59.

(MIRA 13:5)

1. Kafedra organicheskoy khimii, kafedra mikrobiologii i laboratoriya fitotoksikologii Vsesoyuznogo instituta zashchity rasteniy.

(Hydrazones) (Pyridazine) (Fungicides)

5(3)

AUTHORS:

Kost, A. N., Grandberg, I. I.

SOV/74-28-8-2/6

TITLE:

Aldazines and Ketazines (Al'd- i ketaziny)

PERIODICAL:

Uspekhi khimii, 1959, Vol 28, Nr 8, pp 921-947 (USSR)

ABSTRACT:

In the present survey the author lists those publications of recent years in which the synthesis and analysis of the properties of azines is discussed. This relatively simple class of organic compounds, which has been known for a long time, has nevertheless not yet been fully investigated. References 1 - 69 deal with the different applications of azines. The most important and, in fact, only practicable method of synthesis of azines is the interaction of two molecules of a carbonyl compound and a hydrazine molecule by which water is separated out:



(Refs 10, 16, 22, 25, 28, 37, 42-44, 46, 61, 70-171). Relevant publications also contain data on other types of formation of azines. As a rule, however, these are of no practical value

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SOV/74-28-8-2/6

## Aldazines and Ketazines

for the purpose of synthesizing azines. Some of them are of theoretical interest (Refs 8, 43, 55, 77, 92, 95, 97, 98, 110, 140, 149, 172 to 213). Aldazines and ketazines of the aromatic and alicyclic series are mostly crystalline substances with a yellowish coloring. The lowest aldazines and ketazines of the aliphatic series, containing up to 16 carbon atoms, are liquids with a weakly yellowish-greenish coloring and a typical sweet scent. Data concerning the physical properties of aldazines and ketazines are given in references 50, 81, 83, 89, 94, 109, 127, 167, 185, 205, 211, 214 to 236. The double bond between carbon and nitrogen in azines has much in common with the carbon-oxygen double bond in carbonyl compounds. This accounts for a number of properties which approach aldehydes and ketones to their azines. The formation of salts is not characteristic of aldazines and ketazines of the aliphatic and alicyclic series, since the basic properties of nitrogen atoms are not very marked in these compounds. Under the influence of acid agents azines of the aliphatic series engage in various condensation reactions, as is also the case with aldehydes and ketones. The formation of salts and complexes is discussed in references 6, 12, 37, 47, 49, 50, 56, 223, 228, 237 to 256.

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Aldazines and Ketazines

SOV/74-28-8-2/6

Furthermore, examples of other chemical properties of azines are given: decomposition of azines (Refs 9, 14, 15, 20, 38, 50, 57, 66, 70-73, 83, 87, 90, 99, 100, 101, 141, 142, 167, 205, 240, 257 to 275); substitution of hydrogen atoms (Refs 42, 252, 254, 255, 276 to 280); addition on the carbon-nitrogen double bond (Refs 16, 17, 19, 21-30, 39-42, 63, 79, 88, 90, 103, 144, 153, 156, 159, 202, 203, 231, 255, 268, 281 to 323); cyclizations and regrouping with a participation of the  $\alpha$ -hydrogen atom (Refs 8, 10, 12, 13, 31-33, 35, 36, 38, 43, 45-50, 70, 72, 115, 132, 168, 237-239, 260, 261, 268, 269, 298, 324 to 329). There are 329 references, 66 of which are Soviet.

ASSOCIATION: Khimicheskiy f-t MGU im. M. V. Lomonosova  
(Dept. of Chemistry of the MGU imeni M. V. Lomonosov)

Card 3/3

SOV/79-29-1-21/74

AUTHORS: Kost, A. N., Grandberg, I. I.,  
Terent'yev, A. P., Milovanova, S. N.

TITLE: Reactions of Hydrazine Derivatives (Reaktsii proizvodnykh  
gidrazina)  
XXI. 1-Thiocarboxy Pyrazolines and Their Derivatives  
(XXI. 1-Tiokarboksipirazoliny i ikh proizvodnyye)

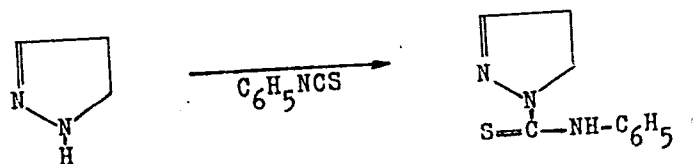
PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 93-97 (USSR)

ABSTRACT: Recently, the derivatives of thiourea were used as antibiotics  
(Ref 1), as poisons against rodents (Ref 2), etc. The salts of  
the dithiocarbamic acids are frequently applied in the  
analytical chemistry to the separation and quantitative  
determination of some cations (Ref 3). The authors synthesized  
some phenyl thioureas of the pyrazoline series, the anilides  
of the 1-pyrazoline-thiocarboxylic acids (I - VIII in table 1),  
by the reaction of phenyl isothiocyanate with pyrazolines which  
possess a nitrogen atom non-substituted in position 1.

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SOV/79-29-1-21/74

Reactions of Hydrazine Derivatives.  
XXI. 1-Thiocarboxy Pyrazolines and Their Derivatives



When carbon disulfide was acting in the pyrazolines, 1-pyrazoline dithiocarboxylic acids were obtained in the form of sodium salts. They are stable in dry, crystalline state. On acidification of the aqueous (alkaline!) solution a decomposition takes place, as the dithiocarboxylic acids are unstable (Scheme 2). 0.2 % aqueous solutions of the pyrazoline dithiocarbonates of sodium remain unchanged for 2-3 days, but not at a higher percentage. It was found that pyrazoline dithiocarbonates form internal complex compounds with a number of metal ions, which might be interesting for analytical chemistry. Their bacterial activity was investigated. The pyrazoline dithiocarbonates obtained (IX - XVIII, Table 2) decompose at a temperature which is lower than their melting point. Therefore they passed, according to scheme 3, to the

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Reactions of Hydrazine Derivatives.

SOV/79-29-1-21/74

XXI. 1-Thiocarboxy Pyrazolines and Their Derivatives

$\beta$ -cyano-ethyl ethers with distinctly marked melting point.  
There are 2 tables and 11 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy gosuderstvennyy universitet i Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (Moscow State University and All-Union Chemico-Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze)

SUBMITTED: December 2, 1957

Card 3/3

AUTHOR: Grandberg, I. I., Kost, A. N. SOV/79-29-2-62/71

TITLE: Investigation of Pyrazoles (Issledovaniye pirazolov). II. Synthesis of N-Phenylpyrazoles From the Corresponding Pyrazolines (II. Sintez N-fenilpirazolov iz sootvetstvuyushchikh pirazolinov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 658-662 (USSR)

ABSTRACT: The authors earlier showed (Ref 1) that pyrazolines with a free NH-group dehydrogenate to pyrazoles on heating with sulphur. In the work under review this method proved to be valid also in the case of dehydrogenating N-phenylpyrazolines. They were obtained by the cyclization of  $\alpha, \beta$ -unsaturated carbonyl compounds or of the Mannich bases with phenyl hydrazine. Phenyl hydrazine, which forms by the reaction of phenyl hydrazine with  $\alpha, \beta$ -unsaturated ketones, cyclizes already at 80°, within 1-2 hours, in which connection the yield in pyrazolines is almost quantitative. Difficulties occur on introducing  $\alpha, \beta$ -unsaturated aldehydes. The cyclization of the Mannich bases (Ref 5) with phenyl hydrazine was carried out according to the general method, i.e., by heating  $\beta$ -dimethylaminoketone in aqueous solution with an equimolecular amount of hydrochloric

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Investigation of Pyrazoles. II. Synthesis of  
N-Phenylpyrazoles From the Corresponding Pyrazolines

SOV/79-29-2-62/71

phenyl hydrazine. The N-phenylpyrazoline separated after 3-5 hours is extracted with ether (yield 60-80 %). All N-phenylpyrazolines obtained were dehydrogenated as above, i.e. like pyrazolines with a non-substituted NH-group. Thus the dehydrogenation process by means of sulphur is not connected with the primary oxidation process on the expense of the NH-group hydrogen. Moreover, 1-phenyl-3-acetamidopyrazoline (Ref 6) was dehydrogenated, which led to 1-phenyl-3-acetamidopyrazole in a 85 % yield. The method suggested is preferable to the usual one, as the pyrazoles are obtained individually and not in the mixture. As done earlier, absorption spectra in the ultraviolet range of the synthesized pyrazoles were taken (4 Figs, Table). Spectrum analytical data agree with those contained in publications. There are 4 figures, 1 table, and 16 references, 5 of which are Soviet.

Card 2/3

Investigation of Pyrazoles.II. Synthesis of  
N-Phenylpyrazoles From the Corresponding Pyrazolines

SOV/79-29-2-62/71

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: December 29, 1957

Card 3/3

5(3)

AUTHORS:

Grandberg, I. I., Kost, A. N.

SOV/79-29-4-12/77

TITLE:

Investigation of Pyrazoles (Issledovaniye pirazolov).  
III. Addition of the  $\alpha$ ,  $\beta$ -Unsaturated Compounds to  
the Pyrazoles (III. Prisoyedineniye  $\alpha$ ,  $\beta$ -nepredel'nykh  
soyedineniy k pirazolam)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1099-1104  
(USSR)

ABSTRACT:

Recently a paper by G. Ya. Kondrat'yeva (Ref 1) was  
published which reported on the oxazoles entering the  
reaction of Diels-Alder in the form of dienes. The author  
tried to extend this reaction to the pyrazoles. The  
compound obtained from 3,5-dimethyl pyrazole (I) with  
maleic anhydride was found to behave like a dibasic-  
acid after opening the anhydride by means of water, and thus  
it was either produced by the diene synthesis (II) or formed  
by the reaction of the mobile hydrogen atoms in the pyrazole  
nucleus (III) or in the NH-group (IV) (Scheme 1). Variant  
(III) was to be excluded since also those pyrazoles  
substituted in position 4 react as readily. In order to

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Investigation of Pyrazoles. III. Addition of the SOV/79-29-4-12/77  
 $\alpha$ ,  $\beta$ -Unsaturated Compounds Onto the Pyrazoles

solve the problem whether the end product possesses structure (II) or (IV), the reaction cycle of scheme 2 was used. On the reaction of compound (V) with (VI) the monohydrazone resulted (VII) which was cyclized to give compound (VIII). This compound (VIII) proved to be completely identical with the product of the reaction of acrylnitrile with 3,5-dimethyl pyrazole (I). In spite of the weakly acid NH group in the pyrazole the latter affiliates acrylnitrile without alkaline catalysts. The reaction with maleic anhydride apparently takes place in the same way. It was thus shown that, in contrast with oxazole, the pyrazole, thiazole, imidazole and isoxazole do not undergo the Diels - Alder reaction. The pyrazoles with free NH groups are easily added to the activated double bond. Absorption spectra in the ultraviolet range were taken of the compounds synthesized (Fig and Table). There are 1 figure, 1 table, and 3 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)  
SUBMITTED: March 3, 1958  
Card 2/2

5(3)

SOV/79-29-8-17/81

AUTHORS:

Grandberg, I. I., Kost, A. N., Yaguzhinskiy, L. S.

TITLE:

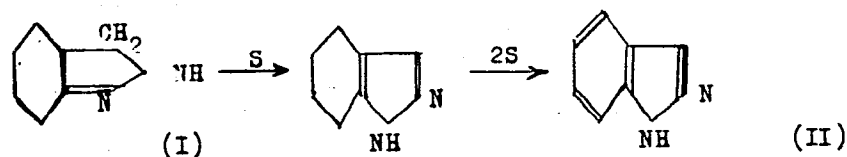
Investigation of Pyrazoles. IV. A New Method of Synthesizing the Tetrahydroindazoles and Indazoles

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2537-2541 (USSR)

ABSTRACT:

In addition to previous papers (Refs 1,2) the authors described in the present paper the dehydrogenation of 3,4- and 4,5-tetramethylene-pyrazolines with sulfur, in which connection the dehydrogenation was found to take place first on the pyrazoline ring to form the 4,5,6,7-tetrahydroindazoles. The latter are transformed on further heating with excess sulfur into the indazoles themselves:



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## Investigation of Pyrazoles. IV. A New Method of Synthesizing the Tetrahydro-indazoles and Indazoles

Thus the 3,4-tetramethylene pyrazoline (Ref 3) forms compound (I) in a 56% yield, and further the indazole (II). Compound (III) obtained according to scheme 2 is transformed on dehydrogenation to give the compounds (IV) and (V). The synthesis of the particularly interesting initial tetramethylene pyrazolines hitherto unknown, which are substituted in position 1, was carried out according to scheme 4. In this way compounds (VI) and (VII) resulted in good yield. In the case of phenylhydrazine the reaction proceeds under formation of different products according to the conditions. The yield in compound (VIII) was only 21%. On heating these pyrazolines (VI)-(VIII) with equimolar quantities of sulfur up to 220-270°, hydrogen sulfide develops, and the corresponding tetrahydroindazoles are formed (40-70%). After 1-1.5 hours, the evolution of H<sub>2</sub>S stops and the reaction is finished. If the pyrazoline is not heated with 1 mole but with 3 moles of sulfur, the transformation into the indazoles is continued, but with very small yields (10-20%). Gradual dehydrogenation proved to be most useful: first up to

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Investigation of Pyrazoles. IV. A New Method of Synthesizing the Tetrahydroindazoles and Indazoles

the tetrahydroindazoles which were separated and converted, on further heating with sulfur, to give the indazoles. This method yields pure products, though in small yields (26-35%). Compound (VII) undergoes complicated transformations by complete dehydrogenation. All resultant pyrazolines and pyrazoles were characterized by means of absorption spectra in ultraviolet light, and were in accordance with those described in publications (Refs 2-5). The spectra, the data of which are presented in the table, were taken by V. I. Bogomolova on the SF-4-spectrophotometer. There are 1 table and 10 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 11, 1958

Card 3/3

BUSEV, A.I., BYR'KO, V.M., GRANDBERG, I.I.

Photometric determination of molybdenum in the presence of tungsten with the aid of sodium 5-phenylpyrazoline-1-dithiocarbamate. Vest. Mosk. un. Ser. 2: khim. 15 no.2:76-80. Mr-Apr '60.

(MIRA 13:6)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.  
(Molybdenum--Analysis)

5.3610

77383  
SOV/79-30-1-44/78

AUTHORS: Grandberg, I. I., Kost, A. N.

TITLE: Investigations of the Pyrazole Series. V. Synthesis of 4-Benzoylpyrazoles

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 203-208 (USSR)

ABSTRACT: The known reaction of 1-phenylpyrazole with benzoyl chloride was investigated. It was established that not only 1-phenylpyrazole but also 1-alkylpyrazoles reacted easily with benzoyl chloride on heating to 190-200° C. Thus, 1,3,5-trimethylpyrazole on boiling with benzoyl chloride gave 1,3,5-trimethyl-4-benzoylpyrazole (yield 94%; bp 201° C (13 mm); its picrate had mp 135-136° C, from 80% alcohol); 1-ethyl-3,5-dimethylpyrazole gave 1-ethyl-3,5-dimethyl-4-benzoylpyrazole (yield 67%; bp 198-200° C (13 mm); its picrate had mp 106° C, from 80% alcohol); 1-benzyl-3,5-dimethylpyrazole gave 1-benzyl-3,5-dimethyl-4-

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Investigations of the Pyrazole Series.  
V. Synthesis of 4-Benzoylpyrazoles

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benzoylpyrazole (yield 84%; bp 244-252° C (13 mm); its picrate had mp 84-85° C, from absolute ether); 1-phenyl-3,5-dimethylpyrazole gave 1-phenyl-3,5-dimethyl-4-benzoylpyrazole (yield 83%; bp 254-257° C (23 mm); mp 99-100° C, from petroleum ether; does not form a picrate). The above reactions were completed in boiling for 12 hr. The introduction of methyl groups in 3- and 5-position facilitated the reaction, as evidenced by 1-phenyl-3-methylpyrazole which on 12 hr gave 1-phenyl-3-methyl-4-benzoylpyrazole (bp 238-243° C (28 mm); mp 136° C, from petroleum ether) in only 12% yield (on heating for 30 hr, a yield of 60% was obtained); whereas 1-phenyl-3,5-dimethylpyrazole was benzoylated in 83% yield in 12 hr. Steric hindrance, or the effect of electronegative substituents, required a much higher temperature of reaction. Thus, 1,3,5-triphenylpyrazole gave 1,3,5-triphenyl-4-benzoylpyrazole on heating for 10 hr in a sealed ampoule at 270° C (yield 81%; mp 171-172° C, from petroleum ether), and 1-phenyl-3-methyl-5-chloropyrazole on

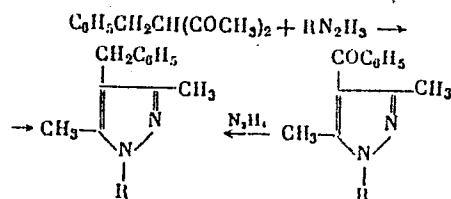
Card 2/4

Investigations of the Pyrazole Series.  
V. Synthesis of 4-Benzoylpyrazoles

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heating for 8 hr in a sealed ampoule at 260-270° C gave 1-phenyl-3-methyl-4-benzoyl-5-chloropyrazole (yield 53%; bp 247-254° C (22 mm); mp 85-86° C, from petroleum ether). The last two reactions could not be effected in an open vessel. the structure of the above benzoylpyrazoles was confirmed by their reduction (Kishner method) to 4-benzylpyrazoles, and by a parallel synthesis of 4-benzylpyrazoles by condensation of 1-benzyl-1-acetylacetone with the corresponding alkylhydrazines.



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The absorption spectra of all the investigated

Investigations of the Pyrazole Series.  
V. Synthesis of 4-Benzoylpyrazoles

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4-benzoylpyrazoles had an absorption band 243-255 m $\mu$  ( $\log \epsilon = 4.2$ ). Spectrophotometer SF-4 was used in the study. There is 1 figure; and 9 references, 1 U.K., 1 Italian, 6 German, 1 Soviet. The U.K. reference is: G. Morgan, C. Taylor, J. Chem. Soc., 1925, 801.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet)

SUBMITTED: December 8, 1958

Card 4/4

5.3610

77384  
SOV/79-30-1-45/78

AUTHORS: Grandberg, I. I., Kost, A. N.

TITLE: Investigation of the Pyrazole Series. VI. Synthesis of 1-Alkylpyrazoles With Asymmetric Distribution of Substituents in the Ring

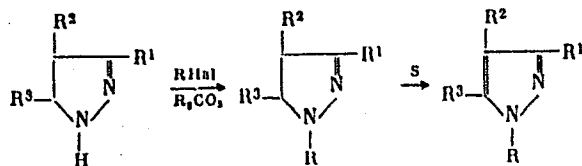
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 208-212 (USSR)

ABSTRACT: A synthesis of 1-alkylpyrazoles with substituents in 3- and 4-position, and 4- and 5-position in the pyrazole ring, was developed by the authors. Pyrazolines obtained by the previously described method (ZhOKh, 1956, Vol 26, p 2319; ibid., 1957, Vol 27, p 1722) were N-alkylated with alkyl bromide in the presence of  $K_2CO_3$ , and dehydrogenated subsequently by heating with sulfur (ZhOKh, 1958, Vol 28, p 3071) to 1-alkylpyrazoles:

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Investigation of the Pyrazole Series.  
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(Abstracter's note: "R<sub>2</sub>CO<sub>3</sub>" should read "K<sub>2</sub>CO<sub>3</sub>").

The following 1-alkylpyrazoles were synthesized:

(1) 1-butyl-4-ethyl-5-propylpyrazole; (2) 1-propyl-3-ethyl-4-methyl-pyrazole; (3) 1-isoamyl-3-methyl-5-isopropylpyrazole; (4) 1,5-dipropyl-4-ethylpyrazole; (5) 1-isoamyl-4-ethyl-5-propylpyrazole; (6) 1-isobutyl-4-ethyl-5-propylpyrazole; (7) 1-isoamyl-4-isopropyl-5-isobutylpyrazole; (8) 1-butyl-4-isopropyl-5-isobutylpyrazole; and (9) 1,5-diisobutyl-4-isopropylpyrazole.

The physical and chemical constants of the 1-alkylpyrazolines and -pyrazoles (see Table 2) are tabulated.

There are 2 tables; 1 figure; and 12 references, 1

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Investigation of the Pyrazole Series  
VI.

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French, 8 German, 3 Soviet.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvenny  
universitet)

SUBMITTED: January 9, 1959

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Table 2. 1-Alkylpyrazoles

Pyrazoles	Yield in %	Boiling point (pressure in mm)	$n_D^{20}$
1-butyl-4-ethyl-5-propylpyrazole	61.0	126° (18)	1.4691
1-propyl-3-ethyl-4-methylpyrazole	64.3	88 (18)	1.4639
1-isoamyl-3-methyl-5-isopropyl- pyrazole	67.5	116 (16)	1.4704
1,5-diisopropyl-4-ethylpyrazole	64.5	116 (16)	1.4658
1-isoamyl-4-ethyl-5-propyl- pyrazole	68.0	131 (16)	1.4682
1-isobutyl-4-ethyl-5-propyl- pyrazole	66.0	119 (16)	1.4654
1-isoamyl-4-isopropyl-5-iso- butylpyrazole	66.5	122 (18)	1.4558
1-butyl-4-isopropyl-5-iso- butylpyrazole	64.0	121 (17)	1.4558
1,5-diisobutyl-4-isopropylpyrazole	64.0	123 (18)	1.4583

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GRANDBERG, I.I.; KOST, A.N.; SIBIRYAKOVA, D.V.

Pyrazoles. Part 8: Synthesis of furylpyrazoles. Zhur. ob. khim.  
30 no.9:2920-2925 S '66. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazole)

GRANDBERG, I.I.; KOST, A.N.; ZHELTIKOVA, M.N.

Pyrazoles. Part 10: Interaction between pyrazoles and mercury salts.  
Zhur. ob. khim. 30 no.9:2931-2941 S '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazole) (Mercury compounds)

GRANDBERG, I.I.; KOST, A.N.

Pyrazoles. Part 9: Alkylation of pyrazoles. Zhur. ob. khim. 30  
no.9:2942-2946 S '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazole) (Alkylation)

GRANDBERG, I.I.; KOST, A.N.; YAGUZHINSKIY, L.S.

Reactions of hydrazine derivatives. Part 30: Case of an anomalous  
course of the Fischer reaction in the tetrahydrocarbazole series.  
Zhur. ob. khim. 30 no.9:3108-3111 S '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet.  
(Carbazole) (Cyclohexanone) (Hydrazine)

GRANDBERG, I.I.; MILOVANOV, S.N.; KOST, A.N.; NETTE, I.T.

Study of pyrazoles. Report No. 21: Biological activity of  
pyrazole derivatives. Vest. Mosk. un. Ser. 6: Biol.,  
pochv. 16 no.3:27-34 My-Je '61. (MIRA 14:6)

1. Kafedry mikrobiologii i organicheskoy khimii, laboratoriya  
khimioterapii Vsesoyuznogo nauchno-issledovatel'skogo khimiko-  
farmakologicheskogo instituta.

(Pyrazole)  
(Antiseptics)

GRANDBERG, I.I.; VASINA, L.G.; KOST, A.N.

Pyrazoles. Part 12: Hydroxy- and chloromethylation of 1-substituted  
pyrazoles. Zhur.ob.khim. 30 no.10:3324-3328 0 '61. (MIRA 14:4)

1. Moskovskiy gosudarstvennyy universitet.

(Pyrazole) (Hydroxymethylation) (Chloromethylation)

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B001/B066

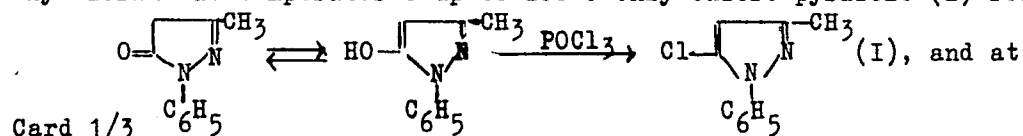
5.3630

AUTHORS: Grandberg, I. I. and Kost, A. N.

TITLE: Investigation of Pyrazoles. XIII. Phosphorylation of Pyrazoles

PERIODICAL: Zhurnal obshchey khimii, 1961, Vol. 31, No. 1, pp. 129 - 131

TEXT: In addition to preceding papers the authors phosphorylated pyrazoles in the thermal way with phosphorus oxychloride. The reaction performed by Michaelis (Ref. 3) of phosphorus oxychloride with 1-phenyl-3-methyl-pyrazolone-5 yielded small amounts of 1-phenyl-3-methyl-5-chloro pyrazolyl-4-phosphinic acid which also arises from 1-phenyl-3-methyl-5-chloro pyrazole with phosphorus oxychloride. It was published without giving the exact method and the resultant yields. The authors failed to reproduce this reaction. On reaction of 1-phenyl-3-methyl-pyrazolone with phosphorus oxychloride at temperatures up to 200°C only chloro pyrazole (I) resulted:



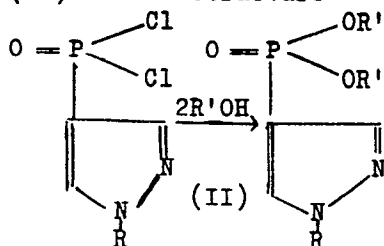
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Investigation of Pyrazoles.

XIII. Phosphorylation of Pyrazoles

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B001/B066

elevated temperature a resinified principal product. 1-phenyl-3-methyl-5-chloro pyrazole (I) did not react with phosphorus oxychloride even at 230° - 240°C (at higher temperatures resinification occurred). Alkyl and aryl pyrazoles with a usual activity of the 4-position of the ring react with phosphorus oxychloride in sealed tubes at temperatures of between 180 and 190° for 15 - 25 h. They form pyrazolyl-phosphinic acid chlorides (II) of the structure



Without separating the acid chlorides (II), the former were allowed to react with alcohols to give esters which were identified. On alkaline hydrolysis, only an alcohol radical was split off, giving an acid ester. In the case of the little active 1,3,5-triphenyl pyrazole only benzoic acid could be separated by heating for 25 h at 230 - 240°. This acid is assumed to be a decomposition product of the pyrazole ring.

There are 3 references: 2 Soviet and 1 German.

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Investigation of Pyrazoles.  
XIII. Phosphorylation of Pyrazoles

S/079/61/031/001/011/025  
B001/B066

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State  
University)

SUBMITTED: March 1, 1960

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GRANDBERG, I.I.; DIN VEY-PY; KOST, A.N.; KOZLOVA, V.I.

Pyrazoles. Part 14: Sulfur dehydrogenation of pyrazolines with functional substituents located directly in the pyrazoline nucleus. Zhur. ob. khim. 31 no. 2:544-548 F '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazoline) (Sulfur) (Dehydrogenation)

GRANDBERG, I.I.

Pyrazoles. Part 15: Reactions of pyrazoles with halogen  
compounds of sulfur. Zhur. ob. khim. 31 no. 2:548-554 F '61.  
(MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazole) (Sulfur chloride) (Thionyl chloride)

GRANDBERG, I.I.; DIN VETPY: KOST, A.N.

Pyrazoles. Part 16: Dehydrogenation of gem-substituted pyrazolines. Zhur. ob. khim. 31 no.3:941-948 Mr '61. (MIRA 14:3)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazoline) (Dehydrogenation)

GRANDBERG, I.I.; VASINA, L.G.; VOLKOVA, A.S.; KOST, A.N.

Pyrazoles. Part 17: Friedel-Crafts reaction in the pyrazole series. Zhur.ob.khim. 31 no.6:1887-1892 Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.  
(Pyrazole) (Friedel-Crafts reaction)

GRANDBERG, I.I.; DIN VEY-PY; SHCHEGOLEVA, V.I.; KOST, A.N.

Pyrazoles. Part 18: Dehydrogenation of 3-hydroxy- and 3-amino-  
pyrazolines with sulfur. Zhur.ob.khim. 31 no.6:1892-1896 Je '61.  
(MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet.  
(Pyrazoline) (Dehydrogenation)

GRANDBERG, I.I.

Pyrazoles. Part 19: Aminopyrazoles as amino components in the  
Skraup reaction. Synthesis of pyrazolopyridines. Zhur.ob.khim.  
31 no.7:2307-2310 J1 '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
(Pyrazole) (Pyrazolopyridine)

GRANDBERG, I.I.; DIN VEY-PY; KOST, A.N.

Pyrazoles. Part 20: Synthesis of 5-aminopyrazoles and their  
sulfamide derivatives. Zhur.ob.khim. 31 no.7:2311-2315 J1 '61.  
(MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
(Pyrazole)